

4.0 REVIEW OF PREVIOUS REPORTS / PLANS

4.1 Review of Transportation Reports

A review of previous transportation studies and reports for the study area is necessary to better understand the problems and possible solutions that have already been identified or studied. In this case, there are several previous reports relevant to the current planning study. They include the following:

- Scoping Study for US 27/I-75 Connector in Garrard and Madison Counties
- Jessamine County I-75 Connector
- Northeast Jessamine Transportation Study
- Man O' War Boulevard Traffic Study
- Community-Wide Congestion Management Study Update

Scoping Study for US 27/I-75 Connector in Garrard and Madison Counties

An initial evaluation of a connector between US 27 and I-75 was completed in June 2000 by Bernardin, Lochmueller, and Associates, Inc. (BLA). The study completed by BLA, while similar in concept, had a different study area. This study was scoped to look at cross-country alternates between US 27 and I-75 south of the Kentucky River and north of the existing KY 52. No routes were evaluated through Jessamine County or north of the river.

The purpose and need for proposed improvements in this study was to improve safety and operations, traffic flow, accessibility and connectivity in the transportation systems of Garrard and Madison Counties. This resulted in the development of eight "build" corridors and three preliminary KY 52 reconstruction options in addition to a "no-build" alternative. The "build" corridors included:

- Alternate 1 from KY 152 to KY 627
- Alternate 2 from KY 34 to KY 627
- Alternate 3 from KY 152 to Duncannon Road
- Alternate 4 from KY 34 to Duncannon Road
- Alternate 5 from KY 152 to KY 876
- Alternate 6 from KY 34 to KY 876
- Alternate 7 from KY 152 to US 25
- Alternate 8 from KY 34 to US 25

In order to determine how much traffic might use each alternate, the Kentucky Statewide Traffic Model (KySTM) was used to create a subarea model for this study area. The base year of the model was 1995 with the year 2025 used as the long-range forecast horizon year. Generally there was little difference between the cross-country corridors with a forecasted volume of traffic up to 5,000 vehicles per day in the year 2025 between US 27 and I-75.

In addition to traffic volumes, the evaluation criteria used in the BLA study included:

Transportation Considerations

- Daily Traffic Volume Served
- Travel Time Savings Over the “no-build” Alternate
- Accessibility
- Congestion Relief
- Congestion Contribution

Environmental Considerations

- Socioeconomic Impacts Associated with Residential and Business Displacements
- Affected Historic Structures
- Affected Archaeological Sites
- Floodplains
- Wetlands
- Threatened, Endangered and Special Concern Species (TES)
- Prime Farmland
- Underground Storage Tanks and Hazardous Material Sites
- Air Quality
- Noise Impacts

Agency Considerations

- Construction Costs
- Right-of-Way Costs

Due to adverse environmental impacts and adverse traffic impacts, Alternates 5 – 8 were eliminated. A public information meeting was held to obtain comments about the “build” alternates, the “no-build”, and the KY 52 reconstruction alternates. At the meeting, there was significant opposition for the construction of a connector road from US 27 through western Madison County to any area along I-75 between Boonsboro Road (KY 627) and Duncannon Road. This included a petition with 1,050 signatures submitted by Madison County Tomorrow opposing the project. Ultimately, the study recommendation was for the reconstruction of KY 52 even though the number of possible/potential displacements is significantly higher. It was preferred from the standpoint of cost-effectiveness and implementation timing.

Jessamine County I-75 Connector

The Jessamine County I-75 Connector study was prepared by Wilbur Smith Associates in July 2005 for the Jessamine County Joint Transportation Task Force to obtain funds to study the feasibility of a connector roadway between US 27 in Nicholasville and I-75. The request specifies looking at a connector from US 27 in Nicholasville to I-75 near the Clays Ferry Bridge, with one terminus north of the bridge and one south. The northern corridor would not require a bridge crossing over the Kentucky River while the southern route would. The initial funding request was for \$495,000 to complete an Alternatives

Study for the project to be administered by the Kentucky Transportation Cabinet (KYTC). At the time of this request, this project was not in the state or MPO Transportation Improvement Plan (TIP), but has been in and out of the MPO plan due to the controversial nature of the project.

In order to request funding, several project objectives were developed. These include:

- Better define the project purpose and need;
- Identify and evaluate potential improvement location and alternatives;
- Make recommendations for future improvements;
- Afford an opportunity for public and agency input so that project needs, improvement alternatives, and potential issues and concerns can be clearly defined and addressed at the earliest stage of project development;
- Identify potential environmental issues; and
- Help expedite the project development process.

According to the request, the preliminary project purposes are:

- Promote Homeland Security initiatives and goals by providing relief and protection from potential problems that may result from any major impacts to I-75 and the Clays Ferry Bridge, a critical asset and key infrastructure on the national transportation system;
- Improve connectivity and increase system capacity while reducing congestion on portions of the National Highway System (NHS) and the National Truck Network (NN); and
- Support economic growth in Jessamine County and adjacent counties by reducing travel time from Nicholasville to I-75 through improved connectivity and reduced congestion.

The need for the project (which supports the project purposes) includes a number of identified issues / deficiencies. One issue is the heavy truck traffic on I-75 (approximately 25 to 30 percent of the vehicle composition is trucks). In addition to the heavy truck volumes, overall congestion is an issue with the I-75 corridor in Kentucky which is expected to be at or above its theoretical capacity by the year 2020. From a connectivity standpoint, between Mt. Vernon and Lexington (a distance of about 40 miles) there is no adequate highway connecting I-75 and US 27. Based on initial travel time estimates, a new connector could save up to twenty minutes from Nicholasville for southbound trucks and other motorists on I-75. Protection of "critical assets and key infrastructure" is also a key issue for this project, particularly the Clays Ferry Bridge. Should the Clays Ferry Bridge be damaged due to hostile acts or earthquake damage, a connector would provide direct access to US 27, which is the closest crossing over the Kentucky River.

In addition to the \$495,000 required to complete the planning study, it is estimated that the project would cost \$135 million to \$190 million depending on the terrain, corridor length, project termini, and the need for a new bridge over the Kentucky River.

Northeast Jessamine Transportation Study

The Northeast Jessamine Transportation Study was prepared by Jordan Jones and Goulding in June 2003 for the Kentucky Transportation Cabinet. The primary objective of the study was to evaluate and address the growth and development in the US 27 corridor area in northeastern Jessamine County, particularly related to the Brannon Crossing Centre development. The aspects of the Northeast Jessamine Transportation Study that relate to this study include a discussion of development impacts to US 27 between Nicholasville and Fayette County and proposed recommendations to mitigate those impacts.

The study concluded that the Brannon Crossing Centre was the primary development that will impact traffic volumes and operations on US 27 in the near future. Since the time of the study, partial build-out of the development has occurred. The initial estimate of generated trips by the development at full-build out was up to 106,000 additional trips. The majority of these trips would access US 27 which (at the time of the study) was determined to operate at or near capacity during the peak hour even without the additional trips. The widening of US 27 to six lanes was specified in the Lexington Area Metropolitan Planning Organization's (MPO) Year 2025 Transportation Plan; however funds for the project were not committed at that point. Based on further analysis, US 27 will continue to operate at or near capacity even with the widening project as any additional capacity will be consumed by the increased traffic volumes. The study recommended that widening US 27 to eight lanes may be required given projected development pressures and that changes in access control may be recommended from access by permit to full access control with grade separations and interchanges at cross roads.

Man O' War Boulevard Traffic Study

The Man O' War Boulevard Traffic Study prepared by ENTRAN was completed in August 2007 for the Lexington-Fayette Urban County Government and the Lexington Area Metropolitan Planning Organization. The purposes of the study were to evaluate one of Lexington's most heavily-traveled and perceived congested roadways, Man O' War Boulevard, and identify and recommend improvements to locations with recurring traffic congestion and safety deficiencies. In particular, vehicular safety was determined to be an issue with almost all intersections identified as high crash rate locations. The majority of crash types were rear-end crashes. A level of service analysis was prepared to assess the existing conditions along Man O' War Boulevard, with the results consistent with levels of service calculated as part of this study. The result showed that traffic operations along Man O' War Boulevard, from a corridor perspective, are at or just below a good level of service. The intersections have operational deficiencies, thereby causing traffic congestion. Some improvement options identified in the report to address the identified deficiencies include:

- Extending turn lanes
- Upgrading traffic signals and signage

- A single point urban interchange (SPUI) at the Nicholasville Road and Man O' War Boulevard intersection
- Roundabouts along Man O' War Boulevard at the Armstrong Mill Road, Crosby Drive, and Rapid Run Drive intersections
- Widen Man O' War Boulevard to six lanes, three in each direction

At the time of this report, the improvement recommendations were not included in any list with the exception of the widening of Man O' War Boulevard. This is currently (as of this report) included in the Lexington Area MPO 2030 Long Range Transportation Plan (LRTP) and in the current Unscheduled Projects List.

Community-Wide Congestion Management Study Update

The Community-Wide Congestion Management Study Update, also prepared by ENTRAN for the Lexington-Fayette Urban County Government and the Lexington Area Metropolitan Planning Organization, and was completed in August 2007. This study is an update to the 2004 Congestion Management Study. Study objectives included:

- Updating decision matrices developed in 2004 that served as analytical tools of the project evaluation process;
- Expanding the geographic extent of the project evaluation process to include routes not addressed in the 2004 study;
- Reviewing and updating recommended improvements from the 2004 study;
- Developing additional recommended congestion mitigation projects and strategies; and,
- Providing recommendations for future enhancement of the congestion management process.

Three routes that are relevant to the US 27 / I-75 corridor study that are evaluated in this report include Man O' War Boulevard, Nicholasville Road (US 27), and Bates Creek Road (KY 1974). To assess the current conditions of these roads, evaluation criteria included the Travel Rate Index (TRI), Level of Service (LOS), and the Crash Rate and Critical Crash Rate Factor.

Currently during the AM peak period, US 27 from the Bypass in Jessamine County north to Man O' War Boulevard, and much of Man O' War Boulevard between US 27 and US 25 operate at a LOS F. Man O' War Boulevard from US 25 to I-75 operates at LOS E. US 25 from Man O' War Boulevard to KY 418 operates at a LOS D, and a small amount of Man O' War Boulevard just east of Bates Creek Road operates at LOS C or better. During the PM peak period all of Man O' War Boulevard between US 27 and I-75, as well as US 27 between Man O' War Boulevard and the bypass operates at LOS F. Only US 25 from Man O' War Boulevard to KY 418 operates at LOS C or better. There are currently sections of US 27, and most of Man O' War Boulevard that have critical crash rate factors greater than one, making it a high crash rate area.

Along Man O' War Boulevard, projects in the 2030 Long-Range Transportation Plan include widening Man O' War Boulevard to six travel lanes. A project included in the

2006 Congestion Management Study involves the construction of refuge areas / breakdown lanes outside the existing curb along Man O' War Boulevard, to keep traffic flowing in the event of a crash or breakdown.

For US 27, projects in the 2030 Long-Range Transportation Plan include widening US 27 from 4 lanes to 6 lanes between Man O' War Boulevard and the bypass. A new East Nicholasville Bypass is currently part of the Lexington MPO TIP. A recommended project from this report is the development of an access management plan for US 27 from the bypass to the Fayette County line.

Along Tates Creek Road, there are no current projects in the 2030 Long-Range Transportation Plan, or from the Congestion Management Study, that affect Tates Creek Road south of Man O' War Boulevard in the US 27 / I-75 corridor study area.

4.2 Review of Comprehensive Plans

2007 Lexington-Fayette Urban County Government Comprehensive Plan

The LFUCG Comprehensive Plan refers to the Year 2030 Transportation as the document that lists specific transportation projects for Fayette County. Transportation projects occurring in the study area include the widening of Man O' War Boulevard from Winchester Road to Nicholasville Road, which is listed in the 2030 Plan as a Federal Aid Project, and the widening of US 27 from New Circle Road to the Nicholasville Bypass as well as the widening of KY 1974 from Malabu Drive to Man O' War Boulevard which is listed in the plan as projects without a dedicated funding source. There is no mention of a connector between US 27 and I-75 in the plan, however a new corridor would likely meet the goals for future transportation systems listed in the report.

2004 Jessamine County / City of Wilmore Comprehensive Plan

A new corridor from US 27 to I-75 is consistent with the goals stated in Jessamine County's Comprehensive Plan of expanding infrastructure to meet current / future needs and providing for an efficient transportation system throughout the County. This project was included in the 2003-2004 Unscheduled Needs List. It was listed as a priority project in the Comprehensive Plan, and noted that it should be designed and constructed to have the least impact on residential / agricultural properties. The plan also shows a shared use trail / bike route along KY 1541 to KY 1981 as part of the 2004 Concept Greenway / Trail Plan.

Madison County, Kentucky 2005 Comprehensive Plan

The Madison County, Kentucky 2005 Comprehensive Plan lists two issues that are relevant to this study. The plan indicates that special attention should be paid to the impact of growth and development in Northern Madison County (from Exit 95 – Boonesboro Road to Exit 97 – Clays Ferry along I-75) as this area is shifting from being mostly agricultural and rural to urban. The plan also notes the need to upgrade certain county roads as well as state and federal highways to accommodate the large-scale increases in traffic volumes within the next 15 to 20 years.

The Comprehensive Plan recommends a North Madison Development Park in the vicinity of the I-75 / KY 627 interchange, as well as reconstruction of that interchange. It also indicates that there will be significant traffic growth along the northern section of US 25 from the Clays Ferry interchange to KY 1156, due mostly to residential and commercial growth. Because this growth occurs within the study area, it could have an impact or be impacted by a new corridor.

Reconstruction of the KY 627 and I-75 interchange is currently on the unscheduled needs list. If this interchange is chosen as the eastern terminus, this project would need to be coordinated with the new connector.

Reconstruction of KY 169 from Goggins lane to the US 25X (Main Street) is on the six-year highway plan. This is a Priority I project under the Recommended Long Range Transportation Improvements for the Madison County area. Widening US 25 from KY 1156 to Exit 97 near the Fayette County line is a Priority II project and widening I-75 to eight lanes from the Fayette County line to the Rockcastle County line is a Priority III project. While these projects would not directly affect a new corridor, they could encourage development or foster additional traffic growth in the area.

Madison County Land Use and Official Zoning Maps

According to the land use and zoning maps, most of the study area is agricultural land use, however, there are several areas zoned for single family residential, multifamily residential, general commercial, neighborhood commercial, and public / semi-public use.